



# Bio, Bio, Biodiversity!

## The Approach

Billy utilizes comprehensive sensory integration through song, dance, audience participation and a multi-dimensional backdrop to engage performance attendees in an exploration of biodiversity. Both the backdrop and the presentation material convey scientific concepts relating to biodiversity in an accurate manner.

The fascinating abundance and complexity of the biodiversity necessary for all living things is presented in relationship to specific global habitats such as coral reefs, old growth forests and soil.

For audiences in grades 3 and above Billy explores human activities and choices that can have a negative impact on earth's biodiversity and offers possible solutions.

## The Objective

Students will develop an appreciation for the wonderful variety of life on earth as they discover the many facets of biodiversity.

Students in grades 3 and above will extend their journey into biodiversity by exploring how it is affected by human behavior.



## The Result

Billy B was great! Kids and teachers loved him, his original songs, the important educational messages and the audience participation. He really raised everyone's awareness of the biodiversity on our planet. The children were engaged (even the 5th grade!) and the teachers dropped their guards and were dancing in the aisles. We all had a ball.

*3rd grade teacher*

**Biodiversity:** the degree of variation of life forms within a given ecosystem, biome, or an entire planet. Biodiversity is a measure of the health of ecosystems. Greater biodiversity implies greater health.

## Suggested Pre-Performance Activities

1. Discuss basic food web concepts. Example: pollination of flower by bee resulting in fruit/vegetable which is then consumed by people or animals.
2. Introduce the idea that specific habitats support specific organisms and specific animal/plant relationships.
3. Have students list all the living organisms in a specific habitat, for example, their school playground or their own backyard.
4. Encourage students to research biodiversity. Extensive resources are provided by the World Wildlife Fund. Teachers and students can go to the web site [www.biodiversity911.com](http://www.biodiversity911.com) to find activities and additional information on biodiversity as well as links to related sites and organizations.

## Bio, Bio, Biodiversity! In the Classroom

### Vocabulary Words

**biodiversity** – the variety of life on Earth, reflected in the variety of ecosystems and species, their processes and interactions, and the genetic variation within and among species.

**bycatch** – fish and/or other marine life that are incidentally caught with the targeted species.

**climate** – regional change in temperature and weather patterns.

**forest** – land on which trees are the principal plant life, usually conducive to wide biodiversity.

**global** – worldwide

**native** – a species that occurs naturally in an area or habitat. Also called indigenous.

**oxygen** – a gas with an atomic weight of 14 that contributes to 21% of the total gasses in the atmosphere. Oxygen is essential to animals, where the presence of it allows aerobic respiration (breathing).

**soil** – the top layer of the Earth's crust that consists of sufficient minerals and organic material to be richly inhabited by organisms in general.

**species** – a group of plants or animals that have certain common features which set them apart from others. The male and female of a species of animal can mate together to produce young that will resemble the parents.

**toxic** – poisonous

**wildlife trade** – the transfer of wildlife or wildlife products from one place to another, within one country or across international borders.



### Post Performance Activities

1. Have a **biodiversity scavenger hunt**. Teachers can download the pages needed for this activity from the World Wildlife Fund web site [http://www.biodiversity911.org/VisittheExhibit/scavenger\\_hunt.pdf](http://www.biodiversity911.org/VisittheExhibit/scavenger_hunt.pdf). Scavenger hunt worksheets are provided for students ranging in age from 4 to 12.
2. Have students **create habitats** using a simple "box project" concept. Students pick a specific habitat and include everything in the box that is necessary to sustain the diverse life within that habitat.
3. Have students go to the web site [www.biodiversity911.com](http://www.biodiversity911.com) or to find additional follow up activities. The "fun and games" links will provide students with an educational as well as entertaining resource.

# Teacher Resources

1. Billy B's CD entitled "Biodiversity and Billy B" contains seventeen original songs that represent, through diverse rhythms and styles, some of the amazing diversity of life on our planet. Preview and/or purchase this energetic and captivating CD at <http://billybproductions.com/>. Click on Store, Purchase CD's, then *Biodiversity and Billy B*.
2. World Wildlife Fund publication "Biodiversity Basics" available at Acorn Naturalists 800-422-8886 or [www.acornnaturalists.com](http://www.acornnaturalists.com).
3. The following web sites have good resources for students and teachers;  
<http://www.globio.org/>  
[www.sciencekids.co.nz/](http://www.sciencekids.co.nz/)  
[www.kidsgeo.com](http://www.kidsgeo.com)

# National Science Education Standards

**Bio, Bio, Biodiversity!** conveys connections to the following standards:

## ***Life Sciences***

- \_ Characteristics of organisms
- \_ Life cycles of organisms
- \_ Organisms and environments

## ***Personal and Social Perspectives***

- \_ Types of resources
- \_ Changes in environments
- \_ Science and technology in local challenges

## ***Unifying Concepts and Processes***

- \_ Systems, order, and organization
- \_ Evidence, models, and explanation
- \_ Form and function

National Research Council. *National Science Education*

*Standards*. Washington, D.C.: National Academy Press, 1996.

